

## **Module 15: Nonconformance And Corrective And Preventive Action**

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## GUIDANCE

No EMS is perfect. You will probably identify problems with your system (especially in the early phases) through audits, measurement, or other activities. In addition, your EMS will need to change as your organization adapts and grows. To deal with system deficiencies, your organization needs a process to ensure that:

1. Problems (including nonconformities) are identified and investigated;
2. Root causes are identified;
3. Corrective and preventive actions are identified and implemented; and,
4. Actions are tracked and their effectiveness is verified.

EMS nonconformities and other system deficiencies (such as legal noncompliance) should be analyzed to detect patterns or **trends**. Identifying trends allows you to anticipate and **prevent** future problems.

Focus on correcting and preventing problems. Preventing problems is generally cheaper than fixing them after they occur (or after they reoccur). Start thinking about problems as **opportunities to improve!**

### Determining Causes of Problems

You will need to establish a method to determine the causes of failing to meet a target. In some cases, the cause might not be difficult to understand. Other times, however, the cause might not be obvious.

One method is called “root cause analysis.” This method can be applied to identify causes for not meeting targets. You can also use it to determine the possible causes of a potential impact. You should determine the root cause of each of your SEAs that has an impact on the environment. For example, if a spill occurs several times in your raw material transfer area, you should attempt to identify why the spill is occurring – that is, the root cause – so you can address the cause and prevent the spill in the future.

#### Key Steps

- ☒ identify the problem
- ☒ investigate to identify the root cause
- ☒ come up with solution
- ☒ implement solution
- ☒ document solution
- ☒ communicate solution
- ☒ evaluate effectiveness of solution

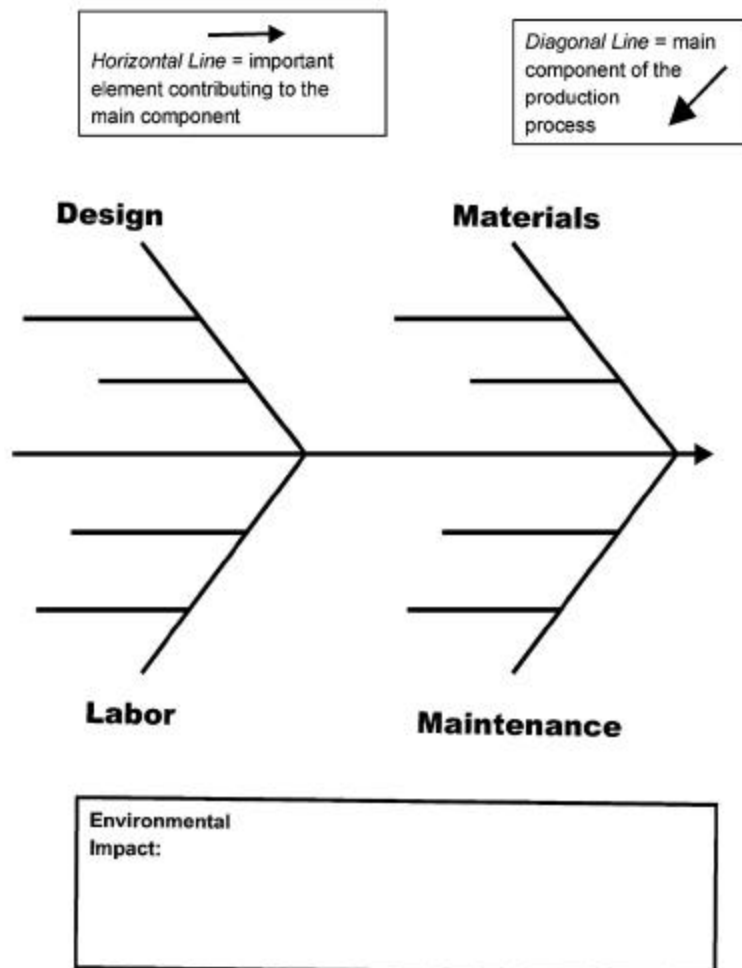
#### Why do EMS problems occur?

*Typical causes include:*

- ☒ poor communication
- ☒ faulty or missing procedures
- ☒ equipment malfunction (or lack of maintenance)
- ☒ lack of training
- ☒ lack of understanding (of requirements)
- ☒ failure to enforce rules
- ☒ corrective actions fail to address root causes of problems

The root cause diagram, shown in **Figure 15-1**, will help you organize your thinking when you analyze your company's potential for environmental impact. This analysis can be done by one person or by a group, with one person writing down the ideas produced. Each diagonal line represents a main component of the production process. Each horizontal line stemming from the diagonal represents an important element contributing to each of the main components. For example, elements of work practices might contribute to the labor component. This diagram is simply a device to help organize the analysis of the cause of potential environmental impacts. Use it if it helps, but don't get hung up on trying to make it work.

**Figure 15-1: Root Cause Diagram**



## Taking corrective action

Once you document a problem with respect to meeting targets, you must resolve it. Take action as quickly as possible. Make sure assigned responsibilities for actions and schedules are clear so that correction occurs in a timely manner.

Employees in the shop may recognize the need for corrective action and provide good ideas for solving problems. Find ways to get them involved in the improvement process. It's important to determine whether a lapse is temporary or due to some flaw in the procedures or controls. For this reason, communicate any findings to employees, and provide any follow-up training for changes in the procedures that may result. The following is a checklist to help complete corrective action. Have you:

- ✓ Identified the problem(s)?
- ✓ Identified the cause(s)?
- ✓ Come up with a solution for each?
- ✓ Implemented the solution(s)?
- ✓ Documented the solution(s)?
- ✓ Communicated the solution(s)?
- ✓ Documented the action(s)?

## Hints

- If your organization has an ISO 9001 management system, you should already have a corrective and preventive action process for **quality** purposes. Use this as a model (or integrate with it) for EMS purposes.
- Some organizations find that they can **combine** some elements of their management review and corrective action processes. These organizations use a portion of their management review meetings to review nonconformities, discuss causes and trends, identify corrective actions, and assign responsibilities.
- The amount of planning and documentation needed for corrective & preventive actions will vary with the **severity** of the problem and its potential environmental **impacts**. Don't go overboard with bureaucracy — simple methods often work quite effectively.
- Once you document a problem, the organization must be committed to **resolving it in a timely manner**. Be sure that your corrective & preventive action process specifies **responsibilities** and **schedules** for completion. Review your **progress** regularly and follow up to ensure that actions taken are effective.
- Make sure your actions are based on good information and analysis of causes. While many corrective actions may be "common sense," you need to **look beneath the surface** to determine **why** problems occur. Many organizations use the term "**root cause**" in their corrective and preventive action processes. While this term can be used to describe a very formal analysis process, it can also mean something simpler – looking past the obvious or immediate reason for a nonconformance to determine why the nonconformance occurred.

- **Rule of thumb:** Corrective actions should (1) resolve the immediate problem, (2) consider whether the same or similar problems exist elsewhere in the organization, and (3) prevent the problem from recurring. The corrective action process also should define the responsibilities and schedules associated with these three steps.
- Initially, most EMS problems may be identified by your internal auditors. However, over the long run, many problems and good ideas may be identified by the people doing the work. **This should be encouraged.** Find ways to get employees involved in the system improvement process (for example, via suggestion boxes, contests, or incentive programs).

**Tool 15-1** is a worksheet that might guide your facility in establishing and implementing a corrective and preventive action program. **Tool 15-2** provides a sample procedure for conducting corrective and preventive action. **Form 15-2a** is a sample form that can be used to document the use of your procedure. **Form 15-2b** can be used to track corrective and preventive actions. **Form 15-2a** could also be combined with the EMS Audit Findings, **Form 17-2e** (see **Module 17**).



## TOOLS

### Tool 15-1: Corrective & Preventive Action Worksheet

Do we have an <b>existing process</b> for corrective and preventive action?  If yes, does that process need to be revised? In what way?	
<b>Who needs to be involved</b> in this process within our organization?	
How are <b>nonconformities</b> and other potential system deficiencies <b>identified</b> ? (List methods such as audits, employee suggestions, ongoing monitoring, etc.)	
How do we <b>determine the causes</b> of nonconformities and other system deficiencies? How is this information used?	
How do we <b>track the status</b> of our corrective and preventive actions?	
How is / can <b>information</b> on nonconformities and corrective actions <b>be used within the EMS</b> (for example, in management review meetings, in employee training sessions, in review of procedures, etc.)	
How do we <b>ensure the effectiveness</b> of our corrective and preventive actions?	
<i>Our next step on corrective and preventive action is to ...</i>	

## **Tool 15-2: Sample Procedure for Corrective and Preventive Action**

### **Purpose**

The purpose of this procedure is to establish and outline the process for identifying, documenting, analyzing, and implementing preventive and corrective actions.

### **Scope**

Preventive or corrective actions may be initiated using this procedure for any environmental problem affecting the organization.

### **General**

- A. Corrective action is generally a reactive process used to address problems after they have occurred. Corrective action is initiated using the CAPAN, **Form 15-2a**, as the primary vehicle for communication. Corrective action may be triggered by a variety of events, including internal audits and management reviews. Other items that might result in a corrective CAPAN include neighbor complaints or the results of monitoring and measurement.
- B. Preventive action is generally a proactive process intended to prevent potential problems before they occur or become more severe. Preventive action also is initiated using the CAPAN, Form 15-2a. Preventive action focuses on identifying negative trends and addressing them before they become significant. Events that might trigger a preventive CAPAN include monitoring and measurement, trends analysis, tracking of progress on achieving objectives and targets, response to emergencies and near misses, and customer or neighbor complaints, among other events.
- C. CAPAN's are prepared, managed, and tracked using the preventive and corrective action database.
- D. The EMR (or designee) is responsible for reviewing issues affecting the EMS, the application and maintenance of this procedure, and any updates to EMS documents affected by the preventive and corrective actions.
- E. The EMR is responsible for logging the CAPAN into the database, and tracking and recording submission of solutions in the database. The requester and recipient of the CAPAN responsible for verifying the effectiveness of the solution. The EMR is responsible for overall tracking and reporting on preventive and corrective actions.
- F. Personnel receiving CAPANs are responsible for instituting the required corrective or preventive action, reporting completion of the required action to the EMR, and assuring sustained effectiveness.
- G. Completed records of CAPANs are maintained in the database for at least two years after completion of the corrective or preventive action.

## Procedure

### A. Issuing a CAPAN

1. Any employee may request a CAPAN. The employee requesting the CAPAN is responsible for bringing the problem to the attention of the EMR. The EMR is responsible for determining whether a CAPAN is appropriate and enters the appropriate information into the corrective and preventive action database. Responsibility for resolving the problem is assigned to a specific individual ("the recipient").
2. The EMR, working with the recipient, determines an appropriate due date for resolving the CAPAN.

### B. Determining and Implementing Corrective and Preventive Actions

1. The CAPAN is issued to the recipient, who is responsible for investigation and resolution of the problem. The recipient is also responsible for communicating the corrective or preventive action taken.
2. If the recipient cannot resolve the problem by the specified due date, he/she is responsible for determining an acceptable alternate due date with the EMR.

### C. Tracking CAPAN's

1. Close-out of CAPAN's should be tracked by the EMR or his designee using **Form 15-2b**. CAPAN's whose resolution dates are overdue appear on the Overdue Solutions report. The EMR is responsible for issuing this report on a weekly basis to the Plant Manager and the recipients of any overdue CAPAN's.
2. Records of CAPAN's are maintained in the database for at least two years after completion of the corrective or preventive action.

### D. Tracking Effectiveness of Solutions

1. The recipient of a CAPAN, in conjunction with the requester, is responsible for verifying the effectiveness of the solution. If the solution is deemed not effective, the CAPAN will be reissued to the original recipient.

### Form 15-2a: Sample Corrective and Preventive Action Notice

Issue Date:	Solution Due Date:
Requested by: Issued to:	
Problem Statement:	
Most Likely Causes:	
Suggested Solutions/Preventions:	
Action Taken:	
Measured Results:	
Corrective and Preventive Action Closed by:	Date:
Contact for Notice:	Date completed:

## Form 15-2b: Sample Corrective and Preventive Action Tracking Log

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